THE SPEED OF ROMANTIC RELATIONSHIP FORMATION: TESTING LIFE-HISTORY AND SELF-CONSTRUAL EXPLANATIONS ON THE "TIMING" OF ANNOUNCING COMMITMENT

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Abstract

People differ in how soon they announce commitment in long-term relationships (e.g., to say "I love you"), but few studies have examined the cause of this individual difference. Life-history (LH) theory predicts that people who adopt a faster LH strategy, relative to others, will be inclined to announce commitment sooner because faster LH individuals tend to reproduce earlier. At the same time, self-construal theory predicts that people who adopt an independent self-construal will be inclined to announce commitment sooner because this type of self-construal has been linked to the tendency to live a fast-paced life and make riskier decisions. To test these two explanations, a survey study was conducted where American participants completed measures on LH strategies, self-construal, and the timing of events which signal an announcement of commitment. Results indicated no relationship between an individual's life history strategy and the timing of announcing commitment, and contradictory results with the predictions made with self-construal and the timing of announcing commitment.

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CHAPTER 1. INTRODUCTION AND LITERATURE REVIEW

In human mating, commitment refers to one's intention to form and maintain a relationship with another person (Campbell & Foster, 2002; Stanley, Rhoades, & Whitton, 2010). Announcing commitment is a key event in forming long-term romantic relationships because it communicates the decision to forgo extra-pair copulation opportunities to start or maintain an investment in a single partner (Baxter & Braithewaite, 2008; Buss & Schmitt, 1993). Relational commitment can be announced in many ways, including saying "I love you" (Ackerman, Griskevicius, & Li, 2011), changing one's Facebook status (Fox, Warber, & Makstaller, 2013), and proposing to or marrying one's partner (Poortman & Mills, 2012; Stanley, Whitton, & Markman, 2004). An important aspect of announcing commitment, which is the focus of this present thesis, is the timing of when to announce one's relational commitment to their partner or to the public. Studying the timing of announcing commitment is important because it signals how fast the relationship is progressing (Owen, 1987). Thus, examining the timing aspect of announcing commitment can aid in the understanding of how romantic relationships develop and progress.

Studies have shown considerable individual variation in how long people wait before declaring their relational commitment. For instance, in a sample of 50 American couples, Surra (1987) found that the average courtship length varied from one to five years. Other studies also reported considerable variation in when to say "I love you" to a romantic partner (Ackerman et al., 2011; Harrison & Shortall, 2011), and when to change one's Facebook status (Fox, Warber, & Makstaller, 2013). What explains this variation in timing of one's intention to announce relational commitment? Several studies in the past have pointed to sexual strategy (Ackerman et al., 2011), or socialization (Owen, 1987) as possible explanations. However, both hypotheses

only explained between-sex differences, and not within-sex differences. Thus, the question of why some (wo)men say "I love you" earlier than other (wo)men still remains unclear. In this thesis, it is posited that the timing of announcing commitment can be explained by two theories (one evolutionary, one cultural) that complement previous explanations: life-history (LH) theory (Stearns, 1992) and self-construal (Markus & Kitayama, 1991), accounting for both between-sex and within-sex differences.

LH theory posits that individuals face a series of tradeoffs in investing in different biological activities (e.g., body maintenance, growth, and reproduction). In making those investment decisions, one can adopt a "slower" LH strategy compared to others by focusing on body maintenance and growth (i.e. future reproduction), or a "faster" life-history strategy by focusing on current reproduction. Announcing commitment earlier—especially in the public—facilitates a sexual agenda (i.e., reproducing earlier; Brantley, 2002) and progression in relational development (e.g., intensifying the relationship; Knapp, 1984). Announcing commitment is a sign that an individual is ready to take the next step in the relationship (Owen, 1987) and it is a something women look for in males when deciding to reproduce (Triver, 1972). For this reason, it is expected that people adopting a faster LH strategy, compared to those adopting a slower life-history strategy, will be more inclined to announce commitment earlier in relationships because it legitimizes earlier sexual reproduction.

Self-construal research posits that one's self-concept varies along an "interdependent-independent" continuum, with interdependent self-construal of the self focusing more on group memberships and relational harmony and independent self-construal of the self focusing more on individual achievement and distinctiveness. People with strong independent self-construal value individual success and achievement above group relations, and are more likely than people with

strong interdependent self-construal to live a fast-paced life (Levine & Norenzayan, 1999). Further, having a stronger independent self-construal is linked to lower levels of communication apprehension (Kim, 1999), and being more risk-prone (Mandel, 2003). If announcing commitment early is a manifestation of living a fast-paced life, having low communication apprehension, and taking relational risks, people who hold a more independent self-construal, compared to an interdependent self-construal, should be more inclined to announce commitment earlier in relationships.

The purpose of this thesis is to apply LH and self-construal theories to explain the individual variation in timing of announcing relational commitment. Although relational development often entails a joint decision, this study focuses on the individual behavioral tendencies. After all, joint decision making is initiated by a party in the relationship. In the following sections. In addition, individual-level evolutionary and cultural explanations bring a unique and different perspective that is very targeted and specific to the phenomena being studied. Evolution and culture influence a variety of individual behaviors, and thus can be used to try and explain the timing of announcement one's commitment. In the following sections, LH theory (Stearns, 1992) and self-construal theory (Markus & Kitayama, 1991) will be reviewed, and predictions will be derived and tested. The thesis will be conducluded with a discussion on the implications of the present findings on the two theories and relational research in general.

Life-History (LH) Theory

LH theory is a biological theory on "timing." It aims to explain how individuals maximize their reproductive success (i.e., passing more copies of their genes to the next generation than others do) by strategically allocating bioenergetics (e.g., time, energy, and material resources) to different biological activities at different phases of one's life span (hence

"life-hisotry"; Stearns, 1992; Chisholm et al., 1993). The theory identifies three basic biological activities, namely, maintenance, growth, and reproduction. Maintenance refers to the activities that keep an organism alive, including respiration, the immune system and digestion. Growth refers to physical and mental development, processes that enhances one's socioeconomic and physical competitiveness and prepare one for reproductive activities. Lastly, reproduction includes finding and retaining partners, sexual activities, and parental efforts. All activities contribute to reproductive success, but when to invest in what activity result in a series of LH tradeoffs because resources are finite and those spent on one activity cannot be spent on another.

The most relevant tradeoff to this research is between current and future reproduction. Current reproduction focuses on reproductive efforts as the primary activity, that is, to reproduce early, fast and in large quantities, while future reproduction focuses on body maintenance and growth (collectively known as "somatic effort"). Allocating bioenergetics towards reproducing later entails the risk of one dying before first reproduction. However, by delaying reproduction by producing later (which limits the number of offspring's an organism can have), an organism can focus their energy on growth and development and thus increase their competitiveness and obtain better reproductive opportunities (e.g., higher quality mates, more resources to be spent on offspring). In contrast, reproducing in the present diverts resources from body maintenance and growth, thereby reducing one's future reproductive success (Kaplan & Gangestad, 2005). Thus, selection in organisms will depend on how the energy is used, and will specifically favor those organisms who use it in ways that maximize their reproductive success in their respective environments.

The decisions one makes in this tradeoff constitute an individual's LH strategy, which varies along a slow-fast continuum (Figueredo, Vasquez, Brumbach, & Schneider, 2004;

Figueredo et al., 2005). Organisms that invest more of their energy in current reproduction at the expense of future reproduction (i.e., somatic effort) are said to adopt a faster LH strategy; those investing more in future reproduction, a slower strategy. Whether one adopts a slower or faster LH strategy – and thus value future or current reproduction – varies substantially between species. Small, short-lived animals such as rabbits possess faster LH strategies because they mature rapidly and reproduce in a short time span while animals that mature later such as primates possess slower LH strategies (Griskevicius, Tybur, Delton, & Robertson, 2011). However, even within a particular species, there is also considerable variation in LH strategies. For example, although shrews typically tend to follow a faster LH strategy (i.e. early maturity, high quantity of offspring), some individual shrews mature slower and reproduce later.

Individual Variation of LH Strategies. Similar to shrews, humans also show considerable variation in LH strategies. Although humans generally adopt a slower LH strategy with long developmental periods, investment in fewer offspring, and longer life spans (Kaplan, Hill, Lancaster, & Hurtado, 2000), some people mature faster and become sexually active earlier (Ellis, 2004). For instance, Upchurch, Levy-Storms, Sucoff, and Aneshensel (1998) found significant sex and ethnic differences in the timing of first sexual intercourse in 877 Los Angeles youths, with black males having the lowest median age (15.8 years old) at first sexual intercourse compared to Caucasians (16.6 years), Hispanics (17 years), and Asian Americans (18.1 years). In addition, males engaged in first sexual intercourse earlier (16.6 years) than females (17.2 years).

At any point on the fast-slow continuum, LH traits cluster together to form coherent, integrated sets. Culminating these LH traits in humans, Figueredo et al. (2004, 2005, 2006, 2007) loaded a wide range of LH traits onto a single latent "*K*-factor" (e.g., slow LH factor). Building off of *r/K* selection theory (MacArthur & Wilson, 1967) which highlighted the combination of

traits in an organism that result from the various tradeoffs, individual differences in LH traits are clustered together as being either *r*-selected or *K*-selected traits. Specifically, *K*-selected organisms (i.e., slower LH strategists) mature slower, have a longer lifespan, have a low mortality rate, reproduce later, and have fewer offspring's (Figueredo et al., 2007). In addition, Brumbach, Figueredo, and Ellis (2009) argued that *K*-selected individuals tend to be in more long-term relationships, plan for their children's future, have better health, and think more in terms of long-term benefits. In comparison, *r*-selected organisms (i.e., faster LH strategists) mature rapidly, have relatively short lifespans, have a more offspring, have a high mortality rate, and have minimal parental care (Kaplan & Gangestad, 2005).

According to LH theory, these individual differences in LH strategies develop in response to various ecological conditions to match the local ecology (Brumbach et al., 2009; Kaplan & Gangestad, 2005). In this way, individuals can increase their chances of survival and reproduction. Thus, not only are individual predisposed to adopt a faster-slower LH, but environmental influences also play a role in determining whether to adopt a faster or slower LH strategy. For instance, it has been well-established that both harsh and unpredictable environments promote a faster LH strategy, while well-off and stable environments promote a slower LH strategy (Brumbach et al., 2009; Ellis, Figueredo, Brumbach, & Schlomer, 2009; Griskevicius, Delton, Robertson, & Tybur, 2011).

Environmental harshness refers to the extent to which an environment causes general physical strain on an organism, and and unpredictability refers to the degree to which there is unpredictable variation in the outcomes of adaptive behaviors. A harsh and unpredictable environment favors a faster LH strategy and thus current reproduction because this strategy maximizes an individuals' chance of passing on their genes in a high mortality environment.

Individuals adopting a slower LH strategy in this environment may die before first reproduction. In comparison, a stable and predictable environment favors a slower LH strategy because organisms can maximize their own and their offsprings quality by increasing somatic effort (e.g., receiving more education) and parental investment.

Effects of LH Strategy on Social Behavior. Much research has shown that people who adopt a faster LH strategy show symptoms of living a "fast" versus "slow-paced" life. Hill, Ross, and Low (1997) found that increases in unpredictability (e.g., to prime participants with the uncertainty of the future or feeling that tomorrow may not come) lead to negative views of the future (e.g., "Basically I have a good idea about what is going to happen in my life" (p. 301)) expectations of a shorter life, and more risk-taking behaviors.

Similarly, Wilson and Daly (1997) showed a negative correlation between male life expectancy, homicide rates, and reproductive timing using Chicago homicide data. They found that neighborhoods with a lower life-expectancy tended to have higher levels of mortality rates for all ages and sexes. If an individual is in an environment where life-expectancy is low and survival is bleak, then more energy will be expended on current reproductive efforts and on risk prone behaviors to ensure their genetic material is successfully passed down. Wilson and Daly (1997) further showed that the median age that women gave birth was 22.6 years old in neighborhoods with low life expectancy, and 27.3 years old in neighborhoods with a long life expectancy. Corroborating Wilson and Daly (1997), other studies also showed that as life expectancy decreases (i.e., living in harsh and unpredictable environment), individuals reproduce earlier (Griskevicius, Delton, Robertson, & Tybur, 2011; Low, Hazel, Parker, & Welch, 2008) Thus, earlier reproductive timing is related to adopting a faster LH strategy.

Other studies on LH theory have consistently found correlations between harsh and violent environmental conditions that provide mortality cues and individual strategies and traits such as earlier reproductive maturity (Ellis, 2004), and earlier mating efforts (Daly, & Wilson, 2005). Timing of reproductive maturity is linked to such behaviors as timing of sex and reproduction because one follows the other (i.e. puberty marks the transition from pre-reproduction to the reproductive phase of the human life cycle). Because earlier reproductive efforts are related to adopting a faster LH strategy (Wilson & Daly, 1997), it follows that earlier rates of maturity and earlier mating efforts in general are also in line with faster LH strategists. This has led some researchers to see faster LH individuals as following a "live fast, die young" principle (Promislow & Harvey, 1990). Taken together, these findings suggest that individuals monitor specific cues in their environment (e.g. morality rates, birth rates, homicide rates, and rates of reproductive maturity) to assess how and when to allocate their energy and resources into either current or future reproductive efforts.

LH Strategy and Timing of Announcing Commitment. The review above suggests that compared to slower LH strategists, faster LH strategists tend to (among other features) engage in sexual activities and reproduce earlier. This suggests that men and women adopting a faster LH strategy, compared to individuals that adopt a slower LH strategy would announce commitment earlier. This is because announcing commitment in a romantic relationship is synonymous with social behaviors that fast LH individuals enact because it promotes early reproduction. Announcing commitment to one's relational partner communicates that one is ready to invest their time and energy in each other for the long-term (Baxter & Braithewaite, 2008), which is considered a pre-requisite for marriage and reproduction per relational development models (Cherlin, 2004; Knapp, 1984). In turning point research, expressions of

commitment (e.g., saying "I love you") intensify the relationship and reflect increases in relational commitment and satisfaction (Baxter & Bullis, 1986). For Knapp (1984), expressions of commitment reflect the state of the relationship itself (e.g., at what stage you are in the relationship). The final stage (i.e. bonding) is when two individual formally announce their commitment to the public and institutionalize their relationship per marriage (Knapp & Vangelisti, 1992). Marriage in the U.S., was typically considered a universal setting for child-bearing (Cherlin, 2004) with only one out of six childbirths occurring outside of marriage (U.S. National Center for Health Statistics, 1982).

According to the parental investment model (Trivers, 1972), individuals establish formal bonding (e.g., getting married) before reproduction because it takes an enormous amount of time, energy, and commitment on both the mother and the father to effectively raise a child. It would be costly for their child's future for a female to copulate with an uncommitted male. It follows that in order to mate and successfully reproduce, faster LH individuals will first put their efforts into forming romantic relationships and formalizing their commitment to one another. Further, if the environment is harsh and unpredictable, faster LH individuals will want to enact behaviors that have immediate gratification like going on a date or engaging in sexual intercourse earlier. This is because faster LH individuals fear that tomorrow may not come, and so behaviors that give immediate rewards are favored over ones that provide benefits way into the future. Thus, it is argued in this thesis that in order to successfully implement a fast LH strategy, faster LH individuals (relative to slower LH individuals) will likely form relationships earlier, announce their commitment earlier, and engage in sexual intercourse earlier because these behaviors intensify the relationship towards copulation and reproductive efforts.

Similar to Ackerman et al., (2011) announcing commitment is seen in this research as a strategic move, or a persuasive tactic used by people (likely unconscious to them) to implement their LH strategy, that is, to get their partner to engage in sexual activities and reproduce. Consistent with this line of reasoning, Ackerman et al. (2011) and Harrison and Shortall (2011) found that men say "I love you" in romantic relationships earlier than women. Ackerman et al. (2011) argued that early expressions of commitment for men may help promote sexual activity in relationships. Fitness pressures in the environment lead men to act quicker in their confessions of commitment in order to strategically persuade their female partner to engage in sexual activity. For those men who do not act quick enough, they lose the opportunity to copulate with a female, as other males and environmental constraints may impede their chances. Although Ackerman et al. (2011) did not use LH theory as a basis for their argument, but instead used a measure of sociosexuality (which is considered another measure of an individual's LH strategy), their line of reasoning is parallel to the arguments made with LH theory. According to LH theory, due to fitness and environmental pressures, men in general adopt a faster LH strategy than women. Prior studies have supported this assertion showing that males on average have a higher mortality and morbidity rate than women (Case & Paxson, 2005; Wells, 2000), are more aggressive to secure potential mates from other males (Giudice, 2015), and have higher rates of violent and property crimes than females (Broidy & Agnew, 1997), which correlates to adopting a faster LH strategy. Thus, announcing one's commitment can be seen as a persuasive attempt by faster LH individuals to promote earlier sexual activity and copulation.

Taken together, LH theory argues that individuals who adopt a faster LH (either due to individual differences or due to their environment) tend to allocate more of their resources to current reproductive efforts over future reproductive efforts. If faster LH individuals focus more

on current reproduction, then it follows that they should engage in social behaviors (i.e., saying "I love you") that lead them to reproduce earlier as compared to individuals with a slow LH. Therefore, I hypothesize:

H1: Individuals adopting a faster LH strategy will announce relational commitment earlier than individuals adopting a slower LH strategy.

Self-Construal Theory

How people cognitively represent themselves has been an important topic in social scientific research. In one of the earliest works regarding culture and the self, Triandis (1989) used the concept of the "self" to explain the relationship between culture and individual behavior. According to Triandis (1989), the "self" is a mediating variable that explains how and why culture influences the way individuals behave and think. He distinguished between three separate parts of the self: the private, public, and collective self. The private self is the way a person views him- or herself; the public self is the way a person is viewed by others, and the collective self is a person's sense of belonging to a social group. The interaction of these three parts comprises the individual's sense of self.

However, this way of thinking of the self did not consider cultural differences. Markus and Kitayama (1991) filled this void by coining the term "self-construal" to describe the ways that people from different cultures define the self. In their study, Markus and Kitayama (1991) found that Europeans and Americans prioritize the self over the group, and these individuals strive for autonomy and separateness from others. In contrast, Asians seek to fit into a group and maintain relational harmony. Thus, depending upon a person's cultural background, their view of the self will vary. From this study, Markus and Kitayama (1991) defined the self across two different dimensions: independent and interdependent.

Independent Self-Construal. Individuals that hold an independent self-construal see themselves as separate and distinct from others (Kim, 2002). In this way, they define themselves based on their own individual characteristics, abilities, attributes and goals which are different and unique from others. Individuals with an independent self-construal believe that each person has a unique set of internal attributions that comprise who they are (Johnson, 1985). The question "Who am I?" is met with reference to internal traits that are relatively invariant across situations (e.g. "I am outgoing, intelligent, strong, and creative") because these traits puts the focus of the self solely on the individual. In turn, these inner characteristics drive and regulate behavior. Individuals who hold an independent self-construal see that no two people are the same, and each person strives to become independent of others (Marsella, DeVoss, & Hsu, 1985).

The goal for an individual who holds an independent self-construal is to stand out, express one's unique characteristics, and to not rely on others. Thus, there is an emphasis on the need to pursue "self-development" and to improve oneself (Kim, Lee, Kim, & Hunter, 2004). For people holding a more independent self-construal, depending upon others is a sign of weakness because it shows that you are not strong enough to stand on your own two feet (Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985). Being the "same person" across situations and asserting yourself are highly valued and are considered signs of maturity.

Interdependent Self-Construal. In contrast, individuals who hold an interdependent self-construal define their sense of self through their relationships with others (Markus & Kitayama, 1991). In other words, interdependent individuals will answer the question of "Who am I?" with references to important relationships or group memberships (e.g. "I am a mother", or "I am an Asian American"). When adopting an interdependent self, individual behavior is

regulated less by internal traits, and more by the desire to maintain group harmony and good relationships with significant others (Kim, 2002). One's ability to fit into the group, fulfill role obligations, and change their behavior to meet situational demands is valued. It follows that achieving the group goal or meeting the needs of others is valued more than individual success and standing out.

Weakness for an interdependent individual is to be headstrong, un-accommodative, and self-centered (Cross, 1995). Interpersonal relationships are of utmost importance, and other people become a sources of definition for the self. Although there are distinctions between these two self-construals, Kim (2002) argued that individuals can score high/low in both interdependent and independent self-construals. Individuals that align with both independence and interdependence values are called bicultural individuals, and individuals that do not align with neither are called marginal (wo)men. However, for this particular study, the focus will be on the distinction between interdependent and independent self-construals.

Self-Construal and Timing of Announcing Commitment. Though research on self-construals do not make direct predictions on the timing of announcing commitment in romantic relationships, several lines of research suggest that people who hold an interdependent self-construal take longer to form romantic relationships than individuals who hold an independent self-construal. First, past studies have found significant correlations between an individual's self-construal and face-concerns (Kim et al., 2004; Oetzel et al., 2001; Oetzel & Ting-Toomey, 2003). Ting-Toomey (1988) advanced two face concerns: self-face and other-face. Self-face is the concern for one's own image over others and other-face is the concern for another's image over one's own. According to Ting-Toomey (1988), individuals engage in specific communicative strategies called *facework* to protect one's face and to either support or challenge

another person's face. Facework behaviors are typically employed in conflict situations, but, they are also used to protect an individual's identity, challenge another person's position, or to manage a shared social identity (Oetzel, Garcia, & Ting-Toomey, 2008). In any interaction, individuals attempt to maintain their "face" by engaging in facework behaviors, and how they do so is determined in part by their self-construal.

In several studies, significant correlations were found between individuals who hold an interdependent self-construal and other-face concerns (Kim et al., 2004; Oetzel et al., 2001). Because interdependent individuals value harmonious relationships, they will try to avoid harming other people's face to try to be accepted by their social groups or to avoid public embarrassment. If other's face concerns are not challenged or threatened, conflicts will be reduced between individuals and their social relationships will be peaceful. This way of thinking strengthens the preference for other-face needs. Thus, interdependent individuals engage in such facework behaviors as: respecting the other and giving in (Oetzel et al., 2001). Although there was not a significant correlation with individuals who hold an independent self-construal and self-face concerns with Kim et al.'s (2004) study, Oetzel et al. (2001) found significant correlations. Using 912 participants across four different countries (Japan, United States, China, Germany), they found that individuals who hold an independent self-construal were positively associated with enacting self-face behaviors. Individuals who hold an independent self-construal value independence and asserting one's own thoughts and goals. Thus, they will prioritize and value their self-concerns over other-face concerns. To independent individuals, another individual's face-concern are second to their own. Independent individuals were shown to engage in such facework behaviors as being aggressive, defending their position, and self-expression (see also, Oetzel and Ting-Toomey (2003)).

If interdependent individuals engage in more other-self facework behaviors in order to keep their relationships harmonious and to avoid public embarrassment, it follows that these individuals may wait longer to publicly announce commitment in a romantic relationship for fear of potentially damaging or embarrassing their partners face until they know for sure that their partner is ready to commit as well. For instance, your significant other may not have told anyone else about the relationship yet because he/she is not ready to take the next step in the relationship. To avoid having your significant other feel publicly embarrassed or be "put on the spot" with a formal announcement of the relationship to friends or family, you may wait until your significant other is ready to publicly announce the relationship. Further, if your romantic partner is also a part of certain social groups you are in, you may want to keep the relationship a secret for fear of changing or shifting the harmonious relationship between you and the social group. As such, individuals who hold an interdependent self-construal may take longer to announce their commitment for fear of threatening or embarrassing their relational partners face.

In contrast, individuals who hold an independent self-construal do not care as much about other's face concerns as compared to their own. Independent individuals will express their own thoughts and feelings about the romantic relationship even if it may threaten their significant other's face. For instance, independent individuals may announce their relationship on "Facebook" or tell their friends and family without discussing it first with their significant other (even if the significant other wanted to wait a few more weeks). As such, independent individuals may be faster in announcing their commitment.

A second line of research that suggest self-construals may predict the timing of announcing commitment in romantic relationships is its association with risk-taking behaviors. A social risk is one where a negative outcome results in loss of face, public embarrassment, or

disapproval among one's friends or family, and a positive outcome results in social approval among one' family or peers. For instance, self-disclosure or asking an individual out on a date are considered social risks because rejection could lead to loss of face and embarassability (Schultz & Moore, 1986).

When deciding to take a social risk, the potential negative outcomes should weight more heavily on interdependent individuals because they care more about avoiding embarrassment. People who are easily embarrassed care more about what others think, the social norms in place, and the appropriateness of their behavior to fit in with the group (Miller, 1995). This leads interdependent individuals taking fewer social risks to avoid being potentially embarrassed or judged by others. Mandel (2003) supported this hypothesis, finding that individuals primed with an interdependent self-construal were less risk-seeking in their social choices, while the reverse was true for individuals primed with an independent self-construal. Hamilton and Biehal (2005) further supported the association between self-construals and risk-taking behaviors. A 2 (prime: independent or interdependent) x 2 (product benefits: promotion or prevention) between-subject's designs was used in their study. Participants were exposed to an ad that primed an interdependent self-construal (e.g., text on ad: "Remember, relationships are what life is really all about") or an independent self-construal (e.g., text on ad: "Remember, enjoying your life is what it is really all about"). Consistent with Mendel's (2003) finding, Hamilton and Biehal (2005) found that individuals primed with an interdependent self-construal chose less risky alternatives with regards to their hypothetical budget allocation than individuals primed with an independent self-construal. This finding has also been replicated with individuals with an Americans (independent self-construal) making riskier choices in both an academic and a medical setting over Chinese participants (interdependent self-construal; Hsee & Weber, 1999).

Announcing commitment in a developing romantic relationship involves a certain degree of social risk. For instance, changing one's Facebook status to "in a relationship" carries the risk of getting rejected, being publicly embarrassed, or being judged by friends or family if they do not approve of the relationship. Saying "I love you" first carries the potential risk of having your feelings unreciprocated, leaving the sender in a face-comprising situation (Floyd, 1997). If individuals who hold an interdependent self-construal choose less risky options and do not engage in risky choices, it follows that these individuals will take longer announce their commitment to their significant other as compared to individuals who hold an independent self-construal. Interdependent individuals will be wary of the social consequences of their actions, and as such, will weigh the costs and benefits thoroughly before announcing their commitment to a romantic partner. However, because there is still the biological drive to procreate and pass down our genetic material (Kenrick, Sadalla, Groth, & Trost, 1990), even individuals who hold an interdependent self-construal should, at some point, decide to take the risk and announce their commitment. On the other hand, independent individuals will not worry so much as interdependent individuals about how their decision of announcing commitment will affect others or themselves. Thus, independent individuals will take more social risks and announce commitment earlier because the potential negative consequences do not weigh so heavily on them.

In a parallel line of argumentation, using participants from Korea, Hawaii, and the mainland United States, Kim, Shin, and Cai (1998) found that the higher one's independent self-construal is, the less one is prone to be silent in both first- and second-attempt requests. In the individualistic culture, talk is valued and is seen as a positive thing. However, in collectivistic (i.e. interdependent) cultures, individuals score higher on communication apprehension (CA).

Communication apprehension is defined as "the level of fear or anxiety associated with either real or anticipated communication with another person or persons" (McCroskey, 1977, p. 78). Past studies have found that collectivistic cultures like China and Japan show higher levels of communication apprehension than samples from individualistic cultures like Australia and the United States (Kim, 1999). Collectivistic cultures and more specifically interdependent individuals are prone to being more indirect in their communication while interpreting meaning from the environment (e.g. nonverbal cues).

Much like risk-taking behaviors, communication apprehension can also have an effect on the timing of announcing commitment. McCrosky (1977) highlights the effects of high communication apprehension: Individuals with high levels of CA will tend to withdraw and avoid communication when possible. This leads individuals being perceived less positively as compared to those individuals with low levels of CA. In turn, individuals will be negatively affected in the economic, academic, political and social life. In fact, supporting this assertion, McCroskey (1982) found that individual with high CA withdrew and avoided communication, and were perceived less positively as a result. Other studies have highlighted that individuals with high CA were shown to talk less (Burgoon, 1976); disclose less (McCrosky & Richmond, 1987), and engage in less information seeking (Burgoon, 1976) than those with low CA. Further, those with high levels of CA can be seen as silent communicators. According to Giles, Coupland, and Wiemann (1992), silence is interpreted as a lack of interest, unwillingness to communicate, sign of hostility or rejection, anxiety or shyness, or lack of verbal skills. Thus, if an individual has a higher level of CA (interdependent self-construal), then announcing commitment may take longer to develop because in a nervous situation (e.g., saying "I love you" first or proposing) individuals will tend to withdraw and try to avoid communication.

In a final line of arguments, Levine and Norenzayan (1999) found that cities with a faster pace of life were more individualistic in nature. In addition, cities with a faster pace of life had higher rates of death by coronary heart disease and higher smoking rates. Traits of individualism and collectivism for 31 cities (one city per country) were subjectively measured on a scale from 1-10 (*1*= most collective, *10* = most individualistic) by a prominent cross-cultural researcher: Triandis.

Levine and Norenzayan (1999) argued that individualistic cultures promote individual achievement, which requires a greater concern with time. In order to be successful and achieve greatness, one must be productive and make every minute count. One sign of being successful is getting married and producing offspring's. In a recent American gallup poll, Jones and Saad (2013) interviewed over 2000 participants and found that 78% want to get married in the future, 65% think it is important to get married, and 64% stated that it is important to marry when a couple has a child. Thus, individuals in an individualistic cultures live a fast-paced life by engaging in behaviors that lead to individual success. Finding a significant other and announcing commitment (e.g., getting married, starting a family) is one sign of success in American culture. Therefore, individuals who align with a more individualistic culture or construe themselves as an independent individual will try to secure a mate to show that they are successful. Since individualistic individuals live a fast-paced life, it follows that their romantic relationship will form quicker as well.

In summary, this section discussed the difference between interdependent and independent self-construal. Individuals who hold an interdependent self-construal value relational harmony, enact behaviors to fit in, and rely and depend upon others. Individuals who hold an independent self-construal value personal growth and achievement, and see themselves

as separate and distinct from others. Further, I made an argument for how an individuals self-construal can potentially predict the timing of romantic relational formation using other variables that self-construal is related to: face concerns, risk-taking behaviors, communication apprehension, and living a fast paced life. With these arguments in mind, I hypothesize that:

H2: Individuals who score higher on having an independent self-construal will announce relational commitment earlier than individuals who score higher on having an interdependent self-construal.

CHAPTER 2: METHODS

Participants

228 American college students participated in this study in exchange for course credit. A college sample was used for this study because men and women between the ages of 18 and 24 are the most sexually active (Boogle, 2008) and are thus suitable to study relational formation and reproductive efforts. Thus, the use of a college sample offers a certain degree of ecological validity. The original sample included 124 females, 86 males, and 18 who either self-identified or did not choose a sex. Data inspection revealed that six participants completed the survey multiple times. Their first response was retained, and repetitions (n =11) were deleted. Due to potential response biases with participants that took the survey multiple times and to stay consistent, only participant's first responses were kept. Another 27 participants skipped items on all three main variables (i.e., self-construal, life history, and socio-sexuality), so their data were also dropped. After these responses were taken out, the data set had a final participant count of N = 190 (female = 109, male = 81, median age = 20.5 years, ranging from 18-68 years old). Of the entire sample, 61% self-identified as Asian (n = 116), 18% as Caucasians (n = 34), 9% as Pacific Islanders (n = 18), 5% as Hispanics/Latinos (n = 10), and 6% as "other" (n = 12). Three participants did not indicate their ethnicity. Finally, 44% of participants (n = 84) reported they were currently in a romantic relationship, 49% (n = 94) indicated they were not currently in a romantic relationship, and another 7% did not indicate their relational status.

Procedure and Measures

Measure of Slow Life-history (LH) Strategy. Following previous research (e.g., Brumbach, Figueredo, & MacDonald, 2005; Figueredo et al., 2006; Figueredo et al., 2014; Olderbak & Figueredo et al., 2009), a 20-item mini-K scale was used to measure an individual's

tendency to engage in a slower LH strategy. With the scale, respondents were asked to indicate to what extent they disagree or agree with statements such as "I avoid taking risks" (-3 = *strongly disagree*, +3 = *strongly agree*; see Appendix B for the full scale). Higher scores indicate slower LH strategists. However, to make interpretation easier, items were recoded onto a one to seven scale. With this new scale, higher scores indicated faster LH strategists relative to individuals who score lower on the scale. The items were internally consistent ($\alpha = .75$, $M = 3.0$, $SD = 0.64$), and were averaged to index respondents LH strategy. In addition, following previous research (e.g., Ackerman et al., 2011), a 9-item revised sociosexual orientation scale (R-SOI) developed by Penke and Asendorph (2008) was used to measure respondents sociosexuality. According to past researchers, restricted and unrestricted sociosexual orientations are viewed as representing two different types of mating strategies along a continuum: long-term strategy and a short-term strategy (Ackerman et al., 2011; Simpson & Gangestad, 1991, 1992). These mating strategies parallel what slower LH (long-term mating strategy) and faster LH individuals (short-term mating strategy) enact, and were thus used as another measure indicating an individual's tendency to have a faster or slower LH strategy. Example items include: "With how many different sexual partners have you had sex within the past 12 months," and "sex without love is OK" (for the full scale see Appendix B). This scale had a borderline acceptable reliability at first ($\alpha = .66$, $M = 3.44$, $SD = 1.09$), which was then improved with the removal of one item: "I do not want to have sex with a person until I am sure that we will have a long-term serious relationship" ($\alpha = .84$, $M = 3.30$, $SD = 1.60$). Thus, the average score of the remaining eight items was used to index respondents sociosexuality, with higher values indicating a more unrestricted sexual orientation.

Measures of Self-Construal (SC). Participants answered the 30-item SC scale developed by Singelis (1994). Half the scale assessed an individual's interdependent self-construal (e.g. "I often have the feeling that my relationships with others are more important than my own accomplishments"; 1 = *strongly disagree*, 7 = *strongly agree*), while the other half assesses an individual's independent self-construal (e.g. "I can talk openly with a person who I meet for the first time, even when this person is much older than I am"; see appendix B). This scale has been widely used in previous research on the effects of SC on embararassability (Singelis & Sharkey, 1995), self-esteem-relational harmony (Kwan, Bond, & Singelis, 1997), relatedness (Gorski & Young, 2002), defining the self based on group membership (Sato & Cameron, 1999), and strength of ethnic identity (Barry, 2002). The items measuring the independent self-construal were internally consistent (Cronbach's $\alpha = .76$, $M = 5.00$, $SD = 0.65$), as well as the items measuring the interdependent self-construal (Cronbach's $\alpha = .78$, $M = 4.96$, $SD = 0.66$). The average scores of the two mini-scales were used to index respondents' independent and interdependent SC, with higher values indicating higher levels of an independent and interdependent SC respectively.

Measure of Timing of Announcing Commitment. Following Ackerman et al. (2011), the timing of announcing relational commitment was measured by having participants indicate the length of time it takes them to communicate their commitment to their significant other. Drawing on past studies, several other events than saying "I love you" (Ackerman, Griskevicius, & Li, 2011) were used, including changing one's Facebook status (Fox, Warber, & Makstaller, 2013), and proposing to or marrying one's partner (Poortman & Mills, 2012; Stanley, Whitton, & Markman, 2004), and introducing a significant other as a boyfriend/girlfriend, introducing a significant other to friends, introducing a significant other to one's parents (Knapp, 1984). An

example question states: “How long is it generally acceptable (i.e. the general population would agree) to do any of these actions with a romantic partner from the time they first start dating?”

1.) Agree to be in a committed relationship with one another
2.) Introduce a significant other as a boyfriend/girlfriend
3.) Change the Facebook status to “in a relationship” (deleted from analysis for all three dependent outcomes)
4.) Introduce a significant other to your friends
5.) Say “I love you”
6.) Introduce a significant other to the parents
7.) Marriage (deleted from analysis for all three dependent outcomes)

In the survey, participants were asked to indicated in weeks, how long it would take them to enact any of the above actions with a hypothetical romantic partner, a past/current romantic partner, and what they think is the normative length of time before enacting those actions. Due to low Cronbach’s alpha for two items (e.g., “How long is it generally acceptable for someone to change their relational status on Facebook to be in a relationship?”, and “how long is it generally acceptable to get married?”) on the scales measuring timing of announcing commitment for past/current romantic partner ($\alpha = .00$), and for the measure on normative beliefs ($\alpha = .24$), and to stay consistent with the dependent measures, these two items were deleted from each scale. The remaining five items were averaged to form a composite measure for the three outcome variables. For each of the three outcome measures: hypothetical partner, a past/current partner, and an individual’s normative belief, the five items were all internally consistent and were thus averaged to form a composite measure of announcing commitment for a hypothetical partner ($\alpha = .71$, $M = 10.5$, $SD = 7.9$), a past/current partner ($\alpha = .82$, $M = 9.6$, $SD = 9.2$), and for an individual’s normative belief ($\alpha = .75$, $M = 8.7$, $SD = 6.7$).

CHAPTER THREE: RESULTS

Data Preparation and Analytic Strategy

I used logarithmic transformation (with base 10) to correct for the extreme skewness ($Z > 3$) of the following variables: timing of announcing commitment to a hypothetical partner, timing of announcing commitment to a past/current partner, and normative beliefs about when to announce commitment. Transformed variables were used for subsequent analyses but whether to use the transformed or original variables did not affect statistical conclusions. To test our hypotheses, we first assessed the zero-order correlations between the outcome measures (i.e., the three timing variables) and the three main predictor variables, namely LH strategy (indexed by mini-K and socio-sexuality) and independent- and interdependent self-construals, with the full sample. We then examined the correlations for males and females separately. In case of significant correlations, we then performed regression analyses for more stringent tests of the effects. All tests are two-tailed.

To streamline the report of results, I henceforth label the three outcome variables "timing hypothetic," "timing past," and "timing normal" to refer to the timing of announcing commitment to a hypothetical partner, timing of announcing commitment to a past/current partner, and an individual's normative beliefs about when to announce commitment.

Hypothesis 1: LH Theory and Timing of Announcing Commitment

Hypothesis 1 stated that individuals adopting a fast LH strategy will announce relational commitment earlier than individuals adopting a slow LH strategy. Failing to support this hypothesis, within this sample, there was no evidence that ones LH strategy (which measured slower or faster LH strategy) correlated with any of the timing variables with the full sample, male sample, or female sample (see Table 1). Socio-sexuality also did not correlate with any of

the timing variables with the full sample, but it significantly correlates with "timing past" and "timing normative" for men but not for women (see Table 1). These findings suggest that male (but not female) respondents who were more sexually unrestricted (and thus faster oriented) took longer time to announce commitment with their past or current partner. The findings also suggest that male but not female respondents who were sexually unrestricted believed that it is normative to take longer time to announce commitment.

To test the above significant correlations more stringently, I ran a series of moderated multiple regression (Aiken & West, 1994) for simple slope analyses. These analyses draw on the full sample but estimate and test specific slopes (e.g., slopes for the male sample) with proper dummy coding. For my purpose, I first dummy-coded respondents' sex so that 0 represents males and 1 represent females. To protect against nonessential multicollinearity and to achieve easier interpretation (Cohen, Cohen, West, & Aiken, 2003), I then mean-centered all four continuous predictor variables (i.e., mini-K, sociosexuality, independent self-construal, and interdependent self-construal), and created four interaction terms by multiplying the centered continuous variables with dummy-coded sex. I also included respondents' age a covariate because age reliably correlates with LH strategies (Ellis, 2004; Wilson & Daly, 1997). I then regressed timing past and timing normative respectively on age, dummy-coded sex, the four centered continuous variables, and the four interaction terms. The coefficients for the four centered continuous variables (such as socio-sexuality) are for the male sample.

Results (see Table 3 and 4) confirmed that the simple slope of sociosexuality (unrestricted sex) was significant for males on timing past and timing normative after controlling for mini-K, the two self-construal variables, and respondents' age and sex. Analyses also revealed a significant sociosexuality by sex interaction on timing normative. This suggests that

the effect of sociosexuality on timing normative was statistically stronger for males than for females. Collectively, these findings provided no support for Hypothesis 1 for LH theory, and contradicting results for sociosexuality; that is, when LH strategy was measured as sociosexuality and males and females were analyzed separately.

Hypothesis 2: Self-Construal and Timing of Announcing Commitment

Hypothesis 2 stated that higher scores on an independent self-construal will correlate with earlier announcement of relational commitment as compared to higher scores on an interdependent self-construal. Once again, failing to support this hypothesis, there was no evidence that self-construals correlate with any of the timing variables with the full sample; except with the case of an interdependent self-construal and the normative belief about when to announce commitment (see Table 1). Further, there were no significant differences for sex between the male and female sample. These findings suggest that self-construals do not have an effect on when an individual announces their commitment to a romantic partner. The correlational findings also suggest that the more an individual holds an interdependent self-construal, the more he or she believes it is normative to announce their commitment later to their significant other.

To test the above significant correlation more stringently, I ran another moderated multiple regression for simple slope analyses with the full sample using the predictor variables: mini-K, sociosexuality, independent self-construal, interdependent self-construal, with age as a covariate on the timing normative variable. Results (see Table 5) showed that the effect of the interdependent self-construal on the timing normative was not significant after controlling for the other predictor variables. This suggests that correlation may be due to the confounding effects of one of the other predictor variables, and not solely by one's interdependent self-construal.

However, an additional analysis was run to see if there was an actual difference between an independent and interdependent self-construal on the timing of announcing commitment. Using Steigers (1980) procedures implemented by Lee and Preacher's (2013) online utility to calculate a test of difference between two dependent correlations with one variable in common, the beta coefficients for an independent and interdependent self-construal were compared and analyzed for the three dependent measures. Results from this test indicate that the effects of an independent self-construal are stronger than the effects of an interdependent self-construal on the timing of announcing commitment for a hypothetical partner ($Z = 3.3$, $p < .01$), a past/current romantic partner ($Z = 2.7$, $p < .01$), and the normative beliefs ($Z = 3.3$, $p < .01$). Thus, there is a statistically significant difference between the effects of the two self-construal variables on timing of announcing commitment, with an independent self-construal having a stronger effect compared to an interdependent self-construal, with their effects in the opposite direction of what was predicted. Therefore, this implies that individuals who hold a more independent self-construal announced their commitment later as compared to individuals who hold a more interdependent self-construal, which is the opposite effect of what was predicted.

CHAPTER 4. DISCUSSION

The purpose of this study was to test both an evolutionary and a cultural explanation for the timing of announcing commitment in the formation of long-term romantic relationships. Drawing on LH and self-construal theories, I examined how American young adults' LH strategies and their self-construals may affect the timing of announcing their commitment in a hypothetical relationship, in a past or current relationship, and their perceived normative timing of announcing commitment. LH theory predicted that people adopting a fast strategy (e.g., to reproduce earlier, faster, and in larger quantities) will announce commitment earlier, and self-construal theory predicts that people adopting an independent self-construal will announce commitment earlier. This research found some evidence contrary to the LH theory predictions and found contradictory evidence for the self-construal explanation. In what follows, I discuss my findings in detail and their implications for LH and self-construal theories.

Key Findings and Implications for LH Theory

Does an individual's faster or slower LH strategy determine whether one announces their commitment earlier or later in romantic relationships? Hypothesis 1 indicated that individuals with a faster LH strategy will announce relational commitment earlier than individuals with a slower LH strategy. Following Copping, Campbell, and Muncer (2014), I measured participants' LH strategies with two components: A *K* factor that taps into participants' planning and control, social contact and support, and attachment, and a factor on their sociosexuality. The assumption was that a weaker *K* (e.g., less planning and control) and more unrestricted sociosexuality indicate a faster LH strategy. My analysis revealed a trend that weaker *K* correlated with announcing commitment earlier in past or present relationship, but the correlation was not significant. The correlation between the *K* factor and timing for a hypothetical partner was

minimal, and there is a trend for weaker *K* (i.e., a faster LH strategy) to correlate with later – instead of earlier announcement of commitment with regards to participants' normative beliefs. Thus, the LH hypothesis received no support when the *K* factor was used to measure LH strategies.

Although it has been argued in this study that announcing commitment can be seen as a social behavior that fast LH individuals enact because it promotes early reproduction, this may not be the case. At least two potential reasons may account for the null findings. First, recent survey data revealed that 44% of American women will have given birth by the time they are 25, but only 38% will be married by that age. The data also indicated that the average age of first marriage increased to 26.5 years old for women, while the median age at first birth is 25.6 years old (Hymowitz, Carroll, Wilcox, & Kaye, 2013). Finally, data from the U.S. National Center for Health Statistics (2003) revealed that 33% of children are born outside of marriages. Thus, in contemporary U.S., one's announcement of commitment (e.g., marriage) may not be necessary to legitimize earlier reproduction.

Second, announcement of commitment also may not be a prerequisite for sexual access; an explanation advanced by Ackerman et al. (2011) to explain why men confess earlier than women. Ackerman et al. (2011) argued that men announce their commitment earlier and are happy to hear women say "I love you" before the onset of first sex because it indicates an interests to advance the relationship to include sexual activity; whereas a post-sex confession may indicate just a desire for a long-term commitment. LH theory argues that individuals who adopt a faster LH strategy tend to enact social behaviors (e.g., sexual activity) that lead to earlier reproduction (Daly & Wilson, 2005). If announcing commitment earlier (e.g., saying "I love you" earlier) leads to a more intimate relationship including sexual activity, as argued by

Ackerman et al., (2011) then it should follow that earlier announcement of commitment does lead to potential for sexual activity.

However, research on casual sex or "hooking up" (i.e., engaging in sexual intercourse outside of a committed relationship) have shown that individuals do not need to commit to one another to engage in sexual activity and that this type of behavior is increasingly common among college students (Fielder, Walsh, Carey, & Carey, 2013). As stated by Hollman and Sillars (2012), hooking up is common for individuals attending a college or university, with most studies reporting that 70-80% of college students have hooked up in the past (Aubrey & Smith, 2011; Paul & Hayes, 2002). Past studies have even conceptualized hookups as sexual encounters between partners who are not in a romantic relationship and do not expect commitment (Heldman & Wade, 2010; Holman & Sillars, 2012). Such a rise in sexual activity and access without any level of commitment did not begin to appear until 2000 (Stinson, 2010), which makes it a relatively new phenomenon occurring among college campuses. Because this study drew participants from a college population that engages in casual sex and hookups without commitment, my respondents may not be suited to test the arguments made with LH theory on the timing of announcing commitment. In addition, because announcing commitment in romantic relationships does not necessarily lead to earlier reproduction (Hymowitz et al., 2013), nor is it a necessity for sexual activity to occur (Heldman & Wade, 2010; Holman & Sillars, 2012), it may not be a social behavior that an individual who adopts a faster LH strategy will engage in. This may explain why there was not a significant correlation between an individual's LH strategy and their timing of announcing commitment.

A second test of the LH hypothesis on the timing of announcing commitment was to use sociosexuality as a measure of LH strategies. People that are more unrestricted in sociosexuality

are more inclined to pursue a faster LH strategy compared to more restricted ones. It thus follows from my hypothesis that participants who are sexually unrestricted are more likely to announce their commitment earlier. Results indicate there is no evidence for this correlation when the full sample (i.e., with male and female participants pooled together) was examined. However, after probing for potential sex differences, results indicate that unrestricted males think it is normative to announce their commitment later (rather than earlier), and reported to had announced commitment to a past or current romantic partner later (rather than earlier). These findings contradict past research that suggested that men announce their commitment earlier in romantic relationships to gain sexual access (Ackerman et al., 2011; Harrison & Shortall 2011). If the function of announcing commitment is to gain sexual access, it follows that men who are more sexually unrestricted and thus more motivated to gain sexual access, should announce commitment earlier. The exact opposite was found.

An evolutionary-economics framework in a contemporary college context may explain this apparent contradiction with previous research. Ackerman et al. (2011) argued that males may confess love earlier in romantic relationships to show their commitment to the female and to motivate early sexual activity. Due to their high parental investment (e.g., gestation period, child-rearing), women are choosier in who to mate with. If a woman is not picky about who to mate with, there may be a chance that she could raise her offspring by herself if the male decides to leave. This, in turn, may affect the life of her off-spring if she cannot provide for it. As such, a woman will try to secure a male who not only can produce as many off-springs with her as possible, but also have qualities that will help ensure the fitness of her and her children (e.g., willingness to provide resources and signals of relationship commitment; Ackerman et al., 2011; Li, Bailey, Kenrick, & Linsenmeier, 2002). Thus, announcing one's relational commitment has

been previously argued, and has been argued in this paper, to be a signal to advance the relationship forward with the intent of gaining sexual access and reproducing, with this being true more for males.

As stated earlier though, at least in contemporary U.S., announcing one's commitment in a romantic relationship is not a prerequisite for either successful reproduction (Hymowitz, Carroll, Wilcox, & Kaye, 2013), nor is it a necessity for sexual activity to occur (Heldman & Wade, 2010). College students engage in casual sex and hook up with other individuals without the need for commitment, and marriage is also not seen as a requirement before couple's can reproduce. If commitment is not necessary to engage in sexual acts or to reproduce with a female, then Ackerman's et al., (2011) argument should only hold with non-college samples. It would be impractical for a male to announce his commitment to a woman to gain sexual access. College men who announce their commitment to a romantic partner undoubtedly reduce their chances of engaging in sexual acts with other readily accessible females who are okay with engaging in copulation without any prior commitment involved.

Since reproductive success is the primary driver of natural selection, it follows that males will try to maximize their reproductive success by engaging in sexual behaviors with as many females as possible. If a male can find non-committal women to engage in copulation with, then it would be beneficial for him to announce his commitment later or not at all. In this way, he can engage in copulation with multiple women (at the same time) without the drawback of having to commit his energy and resources in to any one woman. If not, he faces a high opportunity cost from maintaining that relationship while forfeiting other, less committed relationships. The emergence of non-committal women may be a due to the widespread availability of effective contraceptives (Hopcroft, 2006) that allow women to engage in copulation without the fear of

getting pregnant. In any case, this recent trend in casual, non-committal sex would explain why there is a significant correlation between unrestricted males and a later announcement of commitment, even controlling for LH and the self-construal variables.

Although evolutionary theories have been useful in examining and understanding human behavior in the past (Darwin, 1859, 1871; Stearns, 1992), caution needs to be taken when interpreting human behaviors that may have been modified or changed due to technological advancements. The emergence of widespread contraceptive use (Hopcraft, 2006) may be the reason why prior studies on the timing of announcing commitment show inconsistencies with the results from this study. Any future studies looking at human behavior (e.g., mate preferences, reproductive timing) from an evolutionary lens should consider if the behavior that is being examined can be influenced by any technological devices that are not accounted for in the natural world.

In addition, a direction for future research could be to examine the timing of various sexual activities instead of the timing of announcing commitment with LH theory. Various sexual activities such as getting a first kiss, "sexting" (i.e., sending sexual photos to one another), mutual masturbation, oral sex, phone sex, anal sex, and first time having sexual intercourse (Hymowitz et al., 2013; Fielder & Carey, 2010b) may be better outcome measures that can be explained by LH theory because these sexual acts are associated with increases in sexual arousal and opportunities for copulation (Ariely & Loewenstein, 2006). By engaging in these types of sexual behaviors with a partner, the individuals' involved are providing each other with external cues that are associated with increased odds of gaining access to what Buss and Schmidt (1993) refer to as "short-term opportunistic copulation." Because LH theory focuses on the tradeoff between current and future reproduction (i.e., current reproduction referring to short-term

opportunistic copulation), examining these sexual behaviors may prove fruitful for proponents of LH theory. Instead of the hypothesized relationship between individuals adopting a faster LH strategy and their earlier announcement of commitment in romantic relationship, it may be that faster LH individuals will engage in earlier timing of engaging in sexual behaviors.

In sum, the current findings for LH theory and socio-sexual orientation add to the existing literature in two ways. First, although I have argued that the timing of announcing commitment (e.g., saying "I love you") in romantic relationship is a behavioral indicator of adopting a fast/slow LH strategy, this may not be the case. Results indicate no relationship between an individuals LH strategy and their timing of announcing commitment. Thus, LH theory may not be best suited to examine this behavioral phenomenon. Instead, future studies should investigate the timing of sexual behaviors, because those acts are more associated with copulation and reproduction (Ariely & Loewenstein, 2006), or other theories should be examined instead such as Rusbult's investment model of commitment (1983) or Levinger's cohesiveness theory of commitment (1999). These two theories discuss commitment in interpersonal relationships with a focus on changing commitment levels, which could be applied to studying one's timing of announcing commitment as well. Second, the findings on male's socio-sexual orientation and their timing of announcing commitment show the opposite effect of what prior studies done by Ackerman et al., (2011) and Harrison and Shortall (2011) have shown. The perspective that I have advanced is the same as the evolutionary-economic framework advanced with these two studies, but it also accounts for the shifts in normative behaviors of college students and the effects of technological advancements on modern day behavior. Future studies should be cautious of the unintentional effects of technology on human behavior and reexamine social-normative behaviors that have changed over time as a result. Evolutionary theories that

have been validated study after study may fall prey to technological devices that disrupt our natural state.

Key Findings and Implications for Self-Construal

Just like with the LH predictions, findings from this study did not support my second hypothesis that independent self-construal correlate with earlier announcement of relational commitment compared to those an interdependent self-construal. In fact, upon further inspection, results actually revealed an opposite effect from what was predicted between self-construal and the timing of announcing commitment. The data indicated that higher scores on an independent self-construal correlated (non-significantly) to a later announce their commitment, while the opposite is true for the interdependent self-construal for both a hypothetical partner and for a past/current partner. This was further supported by the test of difference with an independent self-construal having a stronger effect on the timing of announcing commitment in romantic relationships. The only significant result was with individuals scoring higher on an interdependent self-construal believing that it is normative for the American population to announce commitment earlier. However, this effect may be due to confounding variables, as the significant findings became null after a regression analysis was run. Two potential reasons are given below for the results of this study.

First, a slight misinterpretation may explain why the results did not support my hypothesis. In this paper, it was argued that an earlier announcement of commitment was a behavioral manifestation of individuals who live a fast-paced life (Levine & Norenzayan, 1999), have lower levels of communication apprehension (Kim, 1999), and are also more likely to make risky decisions (Mandel, 2003). These three variables were shown to correlate with individuals who hold a more independent self-construal. In essence then, the rationale for why independent

individuals may announce their commitment earlier in romantic relationships was a far-reaching stretch, consisting of an argument that an individual's self-construal correlate with certain behavioral tendencies (e.g., living a fast-paced life, lower levels of communication apprehension, and higher risk taking behaviors), and from those behavioral tendencies, a certain type of behavior (i.e., earlier announcement of commitment) was argued for. This line of reasoning may explain why the results did not support hypothesis two. These behavioral tendencies may not necessarily indicate that an individual will announce their commitment earlier, and further were not measured in this paper. As such, there was a gap between what was argued for, and what was operationalized. A future direction for this study would be to conduct a linear path model assessing and measuring an individual's self-construal and its relation to communication apprehension, risk-taking behavior, and whether or not they live a fast-paced life, and then assessing whether these behaviors correlate with an earlier announcement of commitment in romantic relationships. With this, a researcher can see if a relationship exists between an individual's self-construal and the timing of announcing commitment.

A second reason may lie with a closer examination of how each self-construal was conceptualized. Individual's who hold a more independent self-construal see themselves as separate and distinct from others (Kim, 2002). There is an emphasis on the need to pursue self-development and to improve oneself (Kim et al., 2004). This is also parallel with what individuals with a slower LH tend to allocate their resources towards. In addition, depending upon others is a sign of weakness because it shows that you are not strong enough to stand on your own two feet (Bellah et al., 1985). These descriptions of an independent self-construal align with the contrasting results of this study. Individuals who hold a more independent self-construal want to be seen as distinct, and do not want to become interdependent with another person or

rely on them. If this is true, then announcing commitment should in fact be later for an individual adopting an independent self-construal because announcing one's commitment is seen as a desire to become interdependent with, and maintain a long-term relationship with another (Campbell & Foster, 2002; Stanley, Rhoades, & Whitton, 2010).

Announcing your commitment is a signal that lets the other person know that you want to be together, which is in direct contrast to what an individual who hold a more independent self-construal wants. Thus, this may explain (to a certain extent) why the results from this study showed an opposite effect for what was hypothesized. Supporting this argument, the results from the interdependent self-construal indicated an earlier announcement of commitment for both a hypothetical and past/current partner. In addition, a significant correlation was found for interdependent individuals and their normative beliefs that the general population announce their commitment earlier. Arguing from an intergroup perspective, this makes sense considering that the sample population was taken from the University of Hawai‘i at Mānoa, with a majority of the ethnic population being comprised of Asians (36.2%; About UH Mānoa, 2017). Although Americans are typically considered individualistic (Markus & Kitayama, 1999) and hold a more independent self-construal, if the individual sees the general American population as being students at the University of Hawai‘i at Mānoa, he or she may reason that the general population hold a more interdependent self-construal because the majority of the population is Asian. Prior studies have consistently shown that Asian populations and cultures hold and value a more interdependent self-construal (Kim, 2002; Markus & Kitayama, 1999). Thus, if the participant views the general population the same as them (e.g., having interdependent self-construal), then they will indicate that it is also normative for the general population to announce their commitment earlier.

What was interesting was the difference between an individual's own behaviors (whether hypothetical or past), and their normative beliefs about the behaviors of the general population. There was a significant correlation for their normative beliefs, but not one for their own actions. This may be explained by the inconsistency with an individual's social norms (e.g., normative beliefs) and its effect on individual behavior within the theory of planned behavior (Ajzen, 1988). The theory of planned behavior proposes that the behavior of an individual is determined by intentions to engage in that specific behavior. Intentions are determined by three different components: (1) attitude toward the behavior, (2) subjective norms, and (3) perceived behavioral control (Ajzen, 1991). However, past studies have shown that subjective norms are not the best predictor of intentions and behaviors in the literature (Blanchard et al., 2009; Bogers, Brug, Assema, & Dagnelie, 2004). Thus, although one may have a normative belief about a specific behavior, that may not translate to the individual following that normative belief and enacting the behavior consistent with this belief. However, future research should be conducted to examine the role normative beliefs play on one's timing of announcing commitment.

Although not significant, these findings contribute to the existing literature on self-construals by assessing a new type of behavior that has not been examined yet. Consistent with the conceptualization of an independent self-construal, but not with the hypothesis of this study, the results indicate that there may be a connection between an individual's self-construal and their timing of announcing commitment. Results show a consistent pattern for both self-construals on each of the three dependent variables, and a test of difference showed that there was a significant difference in effect for an independent compared to an interdependent self-construal on the timing of announcing commitment, which mean the results from this study should not be dismissed. Individuals who hold a more independent self-construal announce their

commitment later (although not statistically significant), while individuals who hold a more interdependent self-construal announce their commitment earlier for both a hypothetical and past/current partner.

General Limitations and Future Directions

The findings of this research are limited in several ways. First, the mini-*K* scale may not be an accurate measure of whether one adopts a faster or slower LH strategy. Although Cronbach's alpha for this scale was at ($\alpha = .75$), results showed no relationship between an individual's LH strategy and the timing of announcing commitment in romantic relationships. A possible reason may be that the mini-*K* scale (Figueredo et al., 2014) did not accurately assess whether one adopts a faster of slower LH strategy. For instance, questions such as "I have a close and warm relationship with my own children" do not readily apply to college students, or questions like: "I am closely connected to and involved in my religion" are not clearly connected with attitudes and behaviors a slow or fast LH individual will enact. In future studies, the use of the full Arizona Life History Battery (Figueredo, 2007) may be more fruitful and accurate in depicting one's adoption of a fast or slow LH strategy.

As a second limitation, the timing of when one announces their commitment in a romantic relationship does not just depend upon the single individual doing the announcement of commitment. The formation and progression of romantic relationships depend upon the dyadic interaction between two people (Knapp, 1984). For instance, levels of relational satisfaction (Flora & Segrin, 2000), conflict management (Ting-Toomey, & Oetzel, 2001), how physically proximal and accessible the other person is in a romantic relationship (Horn, Arnone, Nesbitt, Desllets, Sears, Giffin, & Brudi, 1997), and rates of self-disclosure (Altman & Taylor, 1973) can have an impact on when one announces their commitment to their romantic partner. This study

overlooks these potential confounding variables and only focuses on explanations that stem from one individual in the relationship. Thus, a direction for future research would be to examine if these dyadic interactions have an effect on when an individual announces their commitment earlier or later in a romantic relationship.

A third limitation to this study is with how the dependent variables were operationalized. The timing of one's announcement of commitment was operationalized as asking participants when they announce their commitment to a hypothetical partner and to either a past/current romantic relationship. This poses certain risks. First, asking about a hypothetical scenario may not be generalizable to one's reality and may not reflect one's actions in similar real-life scenarios. Although studies have shown that one's behavioral intentions highly correlate (r = .82) with one's actual enactment of said behavior (Kim & Hunter, 1993), this correlation is still not 100% accurate. Thus, even though one may say he/she would say "I love you" to a romantic partner within 12 weeks of dating them if everything was going well, in reality, it may take them sooner if those feelings are present or if situational cues push an earlier expression of love. Second, asking about past behaviors run the risk of incorrect memory recall (Bjork & Whitten, 1974). The number of weeks an individual indicates for when they introduced their boyfriend/girlfriend as their significant other may not be truly the time-frame at which that behavior actually occurred. Instead of asking about hypothetical or past/current romantic partners, a future direction for research may be to conduct a longitudinal study tracking a small group of individuals through their college life. In this study, participants could record the dates and times of when they announced their commitment in their developing relationships to counteract the problems associated with asking about a hypothetical or past romantic partner. This way, the data will more accurately reflect true behaviors of the individual in a more

naturalistic setting, which can be highly generalizable.

A fourth limitation is that this study was culturally relative to a Western population. This study assumed that commitment is announced to a romantic partner, but this may not always be the case. Within other cultures or even within a single culture, commitment can be shown through a variety of other ways besides announcing it to a romantic partner. For instance, Beichen and Murshed (2015) examined how culture influences expressions of love and commitment. Compared to Westerns, who use more verbal expressions to show love and commitment, Easterners are more likely to use gift-giving as a way to express their love and commitment. Other expressions of commitment include: artistic works (e.g., poetry, songs) and emotional help (Ackerman & Kenrick, 2008; Miller, 2000). Thus, future studies should consider cultural and individual variations in what people do to show their commitment to a romantic partner. In addition, future studies should also assess other verbal expressions of commitment. Instead of using the item "I love you", which can be seen as affectionate communication (Floyd, 1997) to measure commitment, things such as: "I am committed to you" may be better fit to study expressions of relational commitment.

A fifth limitation was the deletion of the item "I do not want to have sex with a person until I am sure that we will have a long-term serious relationship" from the revised sociosexual-orientation scale to improve the scale's reliability. This scale item hits at the crux of the conceptualization of an individual having a slower LH strategy, but was deleted from the analysis and additional analyses were not run. As a result, this calls into question the validity of the scale measuring an individual's LH strategy. A potential direction for future research would be to run a single-item analysis on the dependent outcomes to see if there are any significant results. Further, an area for future research could be also to look at each individual item for the

dependent outcome variables and test to see if any significant results occur.

A sixth limitation was that the scale items for the dependent measures (timing hypothetical, timing past, and timing normative) were not factor analyzed to see if all five items loaded onto the same dimension and measured the same construct. There potentially could be items in the scale that load onto a different factor, and thus could skew the results. For instance, although agreeing to be in a romantic relationship and saying "I love you" to a romantic partner were both argued to be ways people announce commitment, the first item indicates that both parties need to come to an agreement on the announcement of commitment, while the second item can come from a sole individual in the relationship. Thus, future research should conduct an exploratory factor analysis to see if these scale items load onto a single factor.

A final limitation to this study is the operationalization of an individual's self construal through the use of Singelis's (1994) self-construal scale. Although self-construal research in the past has delineated an individual as either have an independent self-construal or interdependent self-construal (Mandel, 2003), other self-construal researchers (Kim, 2002) have argued that both self-construals can exist within a single individual, and depending upon situational cues (Triandis, 1989), one self-construal can become more salient than the other. Therefore, an individual can score high on both independence and interdependence (i.e., bi-cultural individual), high on one and low on the other, or low on both (i.e., marginal man; Kim, 2002). Because Singelis's (1994) self-construal scale could not separate these four constructs, these alternative constructs were not examined. A future direction for this study may be to situationally prime individual's with either an independent or interdependent self-construal within the context of announcing commitment in romantic relationships and see if there is a significant effect.

Conclusion

An evolutionary and cultural explanation provide a unique lens for looking at a multitude of behaviors including one's timing of announcing commitment in romantic relationships. Although the results of this study did not show support for LH theory (Stearns, 1992) and revealed the opposite effect to what was predicted for the self-construal explanation (Markus & Kitayama, 1999) possibly due to various methodological and conceptual reasons, findings from this study should not be dismissed. Significant findings were found in relation to a male's socio-sexual orientation and later announcement of commitment, which can be explained by an evolutionary-economics stance. In addition, the results for self-construal show a consistent pattern with all three dependent outcomes in the opposite direction of what was predicted, which indicate that self-construal may in fact have some relation to one's timing of announcing commitment. A future study amended and correcting these conceptual and methodological issues would be a fruitful direction for this research.

TABLE 1

Bivariate correlations for mini-K, R-SOI, Independent Self-Construal, and Interdependent Self-construal with Timing Hypothetical, Timing past, and Timing Normative

	Timing Hypothetical			Timing Past			Timing Normative		
	Full	Male	Female	Full	Male	Female	Full	Male	Female
Mini-K	.02	.17	-.01	-.05	.10	-.12	.07	.16	.07
R-SOI	.05	.22	.16	.11	**.34****	.08	.12	**.40****	.05
IND	.13	.15	.10	.10	.13	.08	.08	.10	.06
INTER	-.10	-.07	-.03	-.10	-.14	.00	**-.15***	-.17	-.06

Note. Mini-K = Life history construct, SOI = Sociosexuality, IND = Independent self-construal, INTER = Interdependent self-construal

** p < .05*

***p < .01*

TABLE 2

Moderated multiple regression based on the full sample predicting timing hypothetical from mini-K, self-construal, and sociosexuality, controlling for age.

Variable	*b*	*SE*	β	*t*	*p*
Age	.01	.01	.14	1.78	.08
Sex (male = 0)	.27	.05	.43	**5.41****	**.00**
Slow LH	.07	.06	.14	1.04	.30
IND. SC	.07	.06	.15	1.13	.26
INTER. SC	-.03	.06	-.05	-0.45	.66
R-SOI	.04	.02	.18	1.56	.12
Slow LH x sex	-.04	.09	-.06	-0.48	.63
IND. SC x sex	-.03	.08	-.05	-0.36	.72
INTER. SC x sex	.04	.08	.06	0.44	.66
R-SOI x sex	-.02	.03	-.06	-0.53	.60

Note. IND SC = Independent self-construal, INTER SC = Interdependent self-construal, SOI = Sociosexuality. The coefficients are for the male subsample.

** $p < .05$*

***$p < .01$*

TABLE 3

Moderated multiple regression predicting timing past from mini-K, self-construal, and sociosexuality, controlling for age.

Variable	*b*	*SE*	β	*t*	*p*
Age	.01	.01	.17	**2.02***	**.045**
Sex (male = 0)	.26	.07	.35	**3.79****	**.00**
Slow LH	-.05	.09	-.09	-0.57	.57
IND. SC	.01	.08	.01	0.09	.93
INTER. SC	-.09	.07	-.17	-1.31	.19
SOI	.08	.03	.35	**2.45****	**.01**
Slow LH x sex	-.01	.12	-.02	-0.09	.93
IND. SC x sex	.01	.10	.01	0.08	.93
INTER. SC x sex	.10	.10	.14	0.93	.35
SOI. x sex	-.05	.04	-.14	-1.14	.26

Note. IND. SC = Independent self-construal, INTER. SC = Interdependent self-construal, SOI = Sociosexuality. The coefficients are for the male subsample.

** $p < .05$*

***$p < .01$*

TABLE 4

Moderated multiple regression predicting timing normative from mini-K, self-construal, and sociosexaulity controlling for age.

Variable	*b*	*SE*	β	*t*	*p*
Age	.01	.01	.08	1.04	.30
Sex (male = 0)	.20	.05	.32	**3.91****	**.00**
Slow LH	-.00	.07	-.01	-0.04	.97
IND. SC	-.00	.07	-.01	-0.05	.96
INTER. SC	-.07	.06	-.14	-1.10	.27
SOI	.06	.02	.31	**2.72****	**.01**
Slow LH x sex	.10	.09	-.14	1.03	.31
IND. SC x sex	.08	.08	.13	0.95	.34
INTER. SC x sex	.06	.08	.10	0.74	.46
SOI. x sex	-.10	.03	-.31	**-2.85****	**.01**

Note. IND = Independent self-construal, INTER = Interdependent self-construal, SOI = Sociosexuality. The coefficients are for the male subsample.

** p < .05*

***p < .01*

TABLE 5

Moderated multiple regression predicting timing normative from mini-K, self-construal, and sociosexuality.

Variable	*b*	*SE*	β	*t*	*p*
Age	.00	.01	.02	0.30	.83
Slow LH	.02	.05	.04	0.46	.65
IND. SC	.07	.04	.15	1.75	.08
INTER. SC	-.07	.04	-.15	-1.75	.08
SOI	.02	.02	.07	0.94	.35

Note. IND = Independent self-construal, INTER = Interdependent self-construal, SOI = Sociosexuality.
** p < .05*
***p < .01*

FIGURE 1

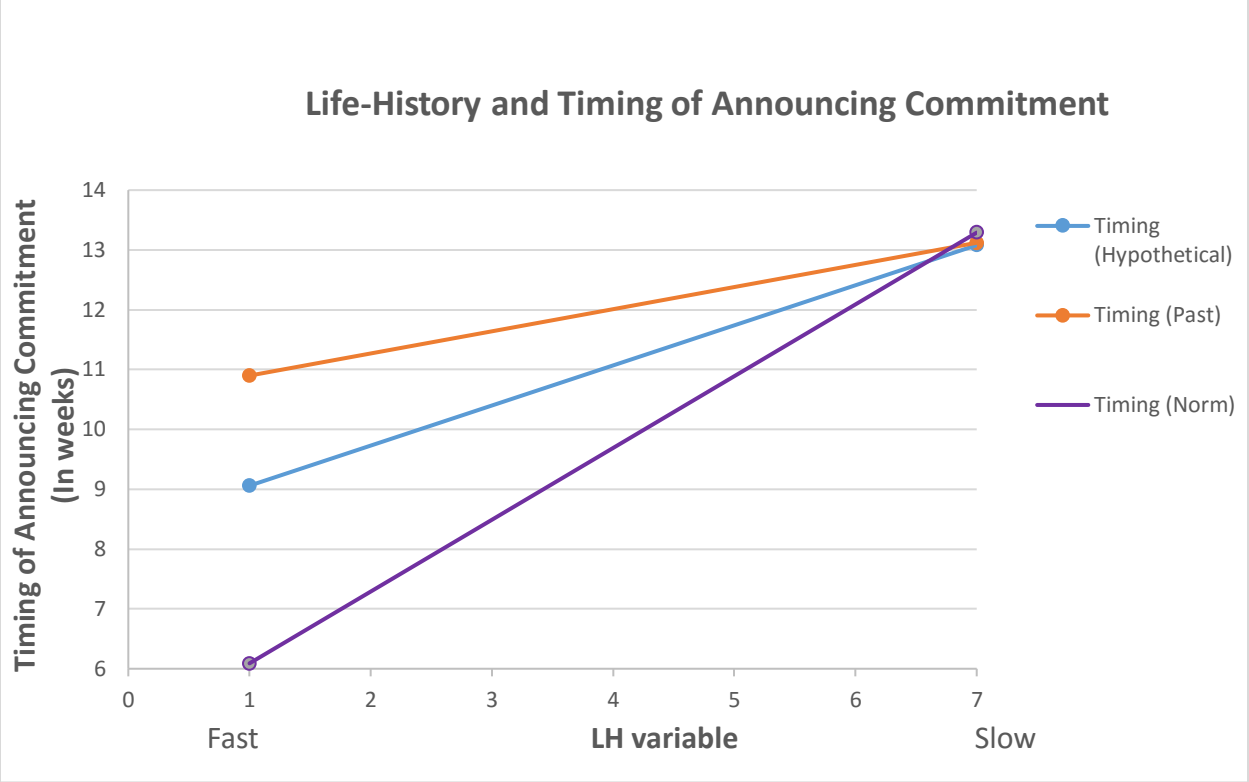

Figure 1. Graphical representation of correlation between mini-K and Timing of Announcing Commitment (in weeks) for all three dependent outcomes.

FIGURE 2

Figure 2. Graphical representation of correlation between Sociosexuality and Timing of Announcing Commitment (in weeks) for all three dependent outcomes.

FIGURE 3

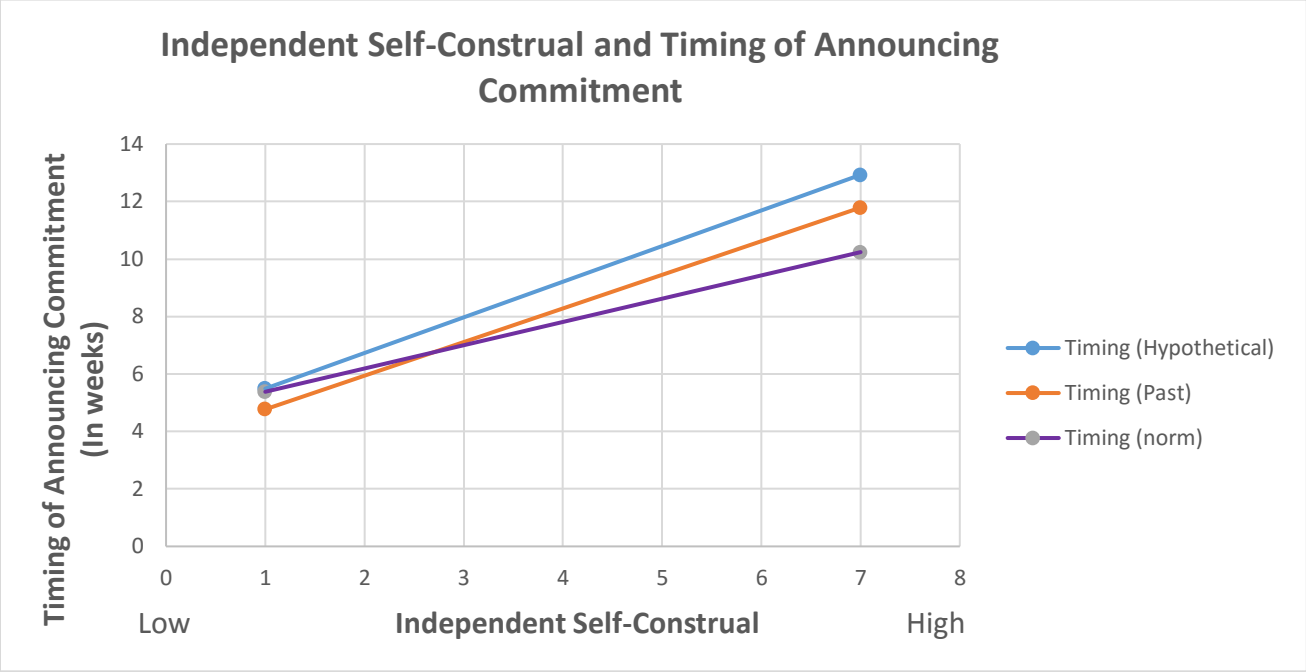

Figure 3. Graphical representation of correlation between Independent Self-construal and Timing of Announcing Commitment for all three dependent outcomes.

FIGURE 4

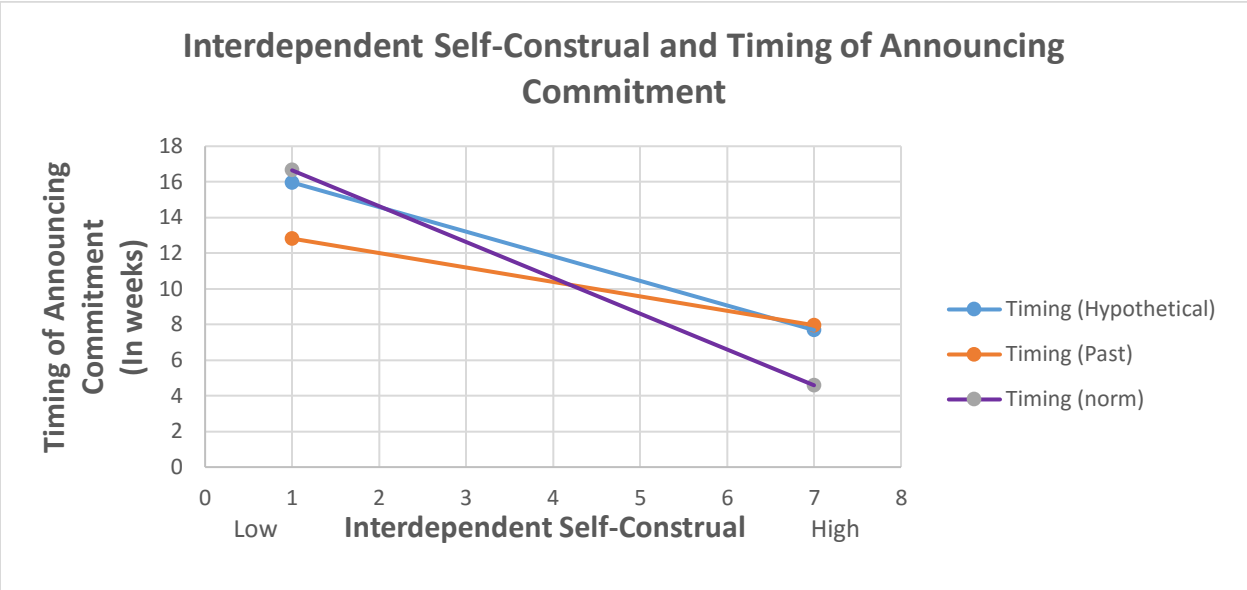

Figure 4. Graphical representation of correlation between Interdependent Self-construal and Timing of Announcing Commitment for all three dependent outcomes.

Appendix A
Consent Form

University of Hawai'i
Consent to Participate in Research

Timing of Announcing Commitment

My name is Kayden Iwasaki and I am a graduate student at the University of Hawai'i at Mānoa (UHM). As part of my thesis, I am conducting a study on the timing of announcing commitment in romantic relationships. I am asking you to participate in this study because you are at least 18 years old and you are enrolled in a Communicology course.

Project description – Activities and Time Commitment: If you participate in this study, you will be asked to answer a series of personality questions. Then you will be asked to provide some demographic information. We expect that around 50 males and 50 females will take part in this project. The survey should take no more than 30 minutes.

Benefits and Risks: There will be no direct benefit for you taking part in this project. Some questions may be personal and sensitive, and you can freely skip those questions without penalty. The findings from this thesis may help create a better understanding of how people form relationships with one another. We believe that there is minimal risk if you decide to participate in this study.

Confidentiality and Privacy: We do not collect any personally-identifiable information, so all responses are anonymous. Please do not include any personal information in your survey responses.

Voluntary Participation: You can freely choose to take part in this study. There will be no penalty or loss of benefits for your decision. If you feel uncomfortable answering any questions, you can stop at any time with no loss of benefit.

Questions: If you have any questions about this study, please e-mail me at kaydeni@hawaii.edu. You may also contact my faculty supervisor, Dr. Jinguang Zhang, at jzhang6@hawaii.edu. If you have questions about your rights as a research participant, you may contact the UH Human Studies Program at (808) 956-5007 or uhirb@hawaii.edu.

Please print a copy of this page for your reference.

APPENDIX B
Self-Construal Scale (Singlies, 1994)

Strongly disagree Strongly agree

1 2 3 4 5 6 7

____1. I enjoy being unique and different from others in many respects.
____2. I can talk openly with a person who I meet for the first time, even when this person is much older than I am.
____3. Even when I strongly disagree with group members, I avoid an argument.
____4. I have respect for the authority figures with whom I interact.
____5. I do my own thing, regardless of what others think.
____6. I respect people who are modest about themselves.
____7. I feel it is important for me to act as an independent person.
____8. I will sacrifice my self interest for the benefit of the group I am in.
____9. I'd rather say "No" directly, than risk being misunderstood.
____10. Having a lively imagination is important to me.
____11. I should take into consideration my parents' advice when making education/career plans.
____12. I feel my fate is intertwined with the fate of those around me.
____13. I prefer to be direct and forthright when dealing with people I've just met.
____14. I feel good when I cooperate with others.
____15. I am comfortable with being singled out for praise or rewards.
____16. If my brother or sister fails, I feel responsible.
____17. I often have the feeling that my relationships with others are more important than my own accomplishments.
____18. Speaking up during a class (or a meeting) is not a problem for me.
____19. I would offer my seat in a bus to my professor (or my boss).
____20. I act the same way no matter who I am with.
____21. My happiness depends on the happiness of those around me.
____22. I value being in good health above everything
____23. I will stay in a group if they need me, even when I am not happy with the group.
____24. I try to do what is best for me, regardless of how that might affect others.
____25. Being able to take care of myself is a primary concern for me.
____26. It is important to me to respect decisions made by the group.
____27. My personal identity, independent of others, is very important to me.
____28. It is important for me to maintain harmony within my group.
____29. I act the same way at home that I do at school (or work).
____30. I usually go along with what others want to do, even when I would rather do something different.

APPENDIX C
Life History theory (Mini-K) scale

strongly disagree strongly agree

-3 -2 -1 0 1 2 3

1. I can often tell how things will turn out
2. I try to understand how I got into a situation to figure out how to handle it
3. I often find the bright side to a bad situation
4. I don't give up until I solve my problems
5. I often make plans in advance
6. I avoid taking risks
7. While growing up, I had a close and warm relationship with my biological mother
8. While growing up, I had a close and warm relationship with my biological father
9. I have a close and warm relationship with my own children.
10. I have a close and warm romantic relationship with my sexual partner
11. I would rather have one than several sexual relationships at a time
12. I have to be closely attached to someone before I am comfortable having sex with them.
13. I am often in social contact with my blood relatives
14. I often get emotional support and practical help from my blood relatives
15. I often give emotional support and practical help to my blood relatives
16. I am often in social contact with my friends
17. I often get emotional support and practical help from my friends
18. I often give emotional support and practical help to my friends
19. I am closely connected to and involved in my community
20. I am closely connected to and involved in my religion

APPENDIX D
R-SOI Scale (Penke & Asendorph, 2008)

1. With how many different partners have you had sex with in the past 12 months?
    - 0 partners
    - 1 partner
    - 2 partners
    - 3 partners
    - 4 partners
    - 5-6 partners
    - 7-9 partners
    - 10-19 partners
    - 20+ partners
2. With how many different partners have you had sexual intercourse on one and only one occasion?
    - 0 partners
    - 1 partner
    - 2 partners
    - 3 partners
    - 4 partners
    - 5-6 partners
    - 7-9 partners
    - 10-19 partners
    - 20+ partners
3. With how many different partners have you had sexual intercourse without having an interest in a long-term committed relationship with this person?
    - 0 partners
    - 1 partner
    - 2 partners
    - 3 partners
    - 4 partners
    - 5-6 partners
    - 7-9 partners
    - 10-19 partners
    - 20+ partners
4. Sex without love is OK. (9-point Likert scale)
    - (1 = Strongly disagree) ←→ (9 = strongly agree)
5. I can imagine myself being comfortable and enjoying "casual" sex with different partners. (9-point Likert scale)
    - (1 = Strongly disagree) ←→ (9 = strongly agree)
6. I do not want to have sex with a person until I am sure that we will have a long-term, serious relationship. (9-point Likert scale)
    - (1 = Strongly disagree) ←→ (9 = strongly agree)
7. How often do you have fantasies about having sex with someone you are not in a committed romantic relationship with?

- Never
- Very seldom
- About once every two or three months
- About once a month
- About once every two weeks
- About once a week
- Several times per week
- Nearly everyday
- At least once a day

8. How often do you experience sexual arousal when you are in contact with someone you are NOT in a committed romantic relationship with?
    - Never
    - Very seldom
    - About once every two or three months
    - About once a month
    - About once every two weeks
    - About once a week
    - Several times per week
    - Nearly everyday
9. In everyday life, how often do you have spontaneous fantasies about having sex with someone you have just met?
    - Never
    - Very seldom
    - About once every two or three months
    - About once a month
    - About once every two weeks
    - About once a week
    - Several times per week
    - Nearly everyday
    - At least once a day

APPENDIX E
Scales for Timing of Announcing Commitment

Timing of Announcing Commitment for Hypothetical Partner:

1.) Imagine you just started dating the person of your dreams. Everything is going well, (i.e. you have a good time together, you connect well, you go on dates often). The next step is to announce your relationship with this person to others. How long will it take you to be comfortable doing the following activities? Please input the number of weeks (e.g., "3" for 3 weeks) in the box provided how long it would take for you to ____.
    a. How long would it take for you to call your significant other as your boyfriend/girlfriend publicly?
    b. How long would it take for you to change your relational status on Facebook to "in a relationship"?
    c. How long would it take you to be comfortable introducing your significant other to your friends?
    d. How long would it take for you to say "I love you" to your significant other in private?
    e. How long would it take for you to say "I love you" to your significant other in public?
    f. How long should you be dating your significant other before introducing him/her to your parents?
    g. In your opinion, when is an acceptable amount of time to date before getting married?

Timing of Announcing Commitment for Past/Current Partner:

2.) Think about either a current or past relationship that you have been apart of. How long did it take you to do any of the following actions? Please answer the following questions to the best of your ability regarding this relationship. Please input the **number of weeks** (e.g., "3" for 3 weeks) it took you to do these from the time when you first started dating. If you did not have a past relationship, are not currently in a relationship, or you have not yet done these activities with a past or current significant other, please leave these questions blank.
    a. How long would it take for you to call your significant other as your boyfriend/girlfriend publicly?
    b. How long would it take for you to change your relational status on Facebook to "in a relationship"?
    c. How long would it take you to be comfortable introducing your significant other to your friends?
    d. How long would it take for you to say "I love you" to your significant other in private?
    e. How long would it take for you to say "I love you" to your significant other in public?

f. How long should you be dating your significant other before introducing him/her to your parents?

Timing of Announcing Commitment for Normative Beliefs

3.) How long is generally acceptable (i.e. Americans in general would agree) to do any of these actions with a romantic partner from the time they first start dating? Please input your answers in the number of weeks (e.g., "3" for 3 weeks).
   a. Introduce a significant other as a boyfriend/girlfriend
   b. Change the Facebook status to "in a relationship"
   c. Introduce a significant other to your friends
   d. Say "I love you" in private
   e. Say "I love you" in public
   f. Introduce a significant other to the parents
   g. Marriage

APPENIDX F
Demographics

1) What your gender?
   a. Male
   b. Female
   c. Self-Identify: _____
2) What is your age?
   a. Self-Identify: _____
3) What is your ethnicity?
   a. Asian
   b. Caucasian
   c. African American
   d. Pacific Islander
   e. Hispanic/Latino
   f. Native American
   g. Self-Identify: _____
   h. Prefer not to answer
4) Are you currently in a romantic relationship?
   a. Yes, I am currently in a romantic relationship
   b. No, I am NOT currently in a romantic relationship
   c. Prefer not to answer
5) What is your family SES (What is your current family household income in U.S. dollars?)
   a. under $15,000
   b. $15,001-$25,000
   c. $25,001-$35,000
   d. $35,001- $50,000
   e. $50,001-$75,000
   f. $75,001-$100,000
   g. $100,001-$150,000
   h. more than $150,000
   i. don't know/ prefer not to answer
6) What is your sexual orientation?
   a. Heterosexual
   b. Homosexual
   c. Self-Identify: _____
   d. Prefer not to answer

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